

Serial No. : 10/652,758  
Filed : August 29, 2003

IN THE CLAIMS:

The current status of the claims is as follows:

1. (previously amended) A display method for a navigation system, comprising the following steps of:

reading out map data from a map data storage for displaying a map image on a screen of a navigation system;

converting the map data to screen coordinates so that a map image intended by a user is displayed on a correct position on the screen;

storing the map data converted to the screen coordinates in a memory which operates faster than the map data storage; and

zooming the map image by enlarging or shrinking distances of points on the map image relative to a center of the screen;

wherein the map data read out from the map data storage covers an area which is larger than that corresponds to the screen of the navigation system, and the converted data in the memory is used as is when zooming-in the map image, and additional map data is retrieved from the map data storage when zooming-out the map image when the converted map data in the memory is insufficient; and

wherein when the map image is zoomed-in to a predetermined degree to sufficiently enlarge the map image, the navigation system displays POI (point of interest) icons and a balloon message on the map image to prompt the user to examine the information regarding the POI icons where the

Serial No. : 10/652,758  
Filed : August 29, 2003

balloon message is a text message displayed within a balloon shape on the screen.

2. (previously amended) A display method for a navigation system as defined in Claim 1, further comprising the step of:

reading out the converted map data from the memory and multiplying a map scale value which is larger than one, thereby enlarging the map image on the screen.

3. (previously amended) A display method for a navigation system as defined in Claim 1, further comprising the step of:

reading out the converted map data from the memory and multiplying a map scale value which is smaller than one, thereby shrinking the map image on the screen.

4. (previously canceled)

5. (previously amended) A display method for a navigation system as defined in Claim 1, further comprising the steps of:

converting the additional map data with respect to the screen coordinates;

combining the converted map data from the memory and the converted additional map data; and

displaying the map image encompassing a larger area than that covered by the original map image.

6. (original) A display method for a navigation system as defined in Claim 1, wherein said memory is a buffer memory or a map memory that is able to temporarily store the map data retrieved from the map data storage.

Serial No. : 10/652,758  
Filed : August 29, 2003

7. (original) A display method for a navigation system as defined in Claim 1, wherein said map data storage is a CD-ROM (compact disc read only memory), DVD (digital versatile disc), or a hard disc which stores map information for conducting operations for the navigation system.

8. (original) A display method for a navigation system as defined in Claim 1, wherein said step of zooming the map image includes a step of positioning an area of interest on the map image to the center of the screen.

9. (original) A display method for a navigation system as defined in Claim 1, further comprising the steps of:

positioning an area of interest on the map image to the center of the screen;

zooming-in the map image to a degree that new information for selecting a destination is displayed on the screen; and

selecting the destination using the new information on the screen to calculate a route to the destination.

10. (original) A display method for a navigation system as defined in Claim 9, wherein said new information includes POI (point of interest) icons showing positions and categories of POIs on the screen.

11. (previously amended) A display apparatus for a navigation system, comprising:

means for reading out map data from a map data storage for displaying a map image on a screen of a navigation system;

Serial No. : 10/652,758  
Filed : August 29, 2003

means for converting the map data to screen coordinates so that a map image intended by a user is displayed on a correct position on the screen;

means for storing the map data converted to the screen coordinates in a memory which operates faster than the map data storage; and

means for zooming the map image by enlarging or shrinking distances of points on the map image relative to a center of the screen;

wherein the map data read out from the map data storage covers an area which is larger than that corresponds to the screen of the navigation system, and the converted data in the memory is used as is when zooming-in the map image, and additional map data is retrieved from the map data storage when zooming-out the map image when the converted map data in the memory is insufficient; and

wherein when the map image is zoomed-in to a predetermined degree to sufficiently enlarge the map image, the navigation system displays POI (point of interest) icons and a balloon message on the map image to prompt the user to examine the information regarding the POI icons where the balloon message is a text message displayed within a balloon shape on the screen.

12. (previously amended) A display apparatus for a navigation system as defined in Claim 11, further comprising:

Serial No. : 10/652,758  
Filed : August 29, 2003

means for reading out the converted map data from the memory and multiplying a map scale value which is larger than one, thereby enlarging the map image on the screen.

13. (previously amended) A display apparatus for a navigation system as defined in Claim 11, further comprising:

means for reading out the converted map data from the memory and multiplying a map scale value which is smaller than one, thereby shrinking the map image on the screen.

14. (previously canceled)

15. (previously amended) A display apparatus for a navigation system as defined in Claim 11, further comprising:

means for converting the additional map data with respect to the screen coordinates;

means for combining the converted map data from the memory and the converted additional map data; and

means for displaying the map image encompassing a larger area than that covered by the original map image.

16. (original) A display apparatus for a navigation system as defined in Claim 11, wherein said memory is a buffer memory or a map memory that is able to temporarily store the map data retrieved from the map data storage.

17. (original) A display apparatus for a navigation system as defined in Claim 11, wherein said map data storage is a CD-ROM (compact disc read only memory), DVD (digital versatile disc), or a hard disc which stores map information for conducting operations for the navigation system.

Serial No. : 10/652,758  
Filed : August 29, 2003

18. (original) A display apparatus for a navigation system as defined in Claim 11, wherein said means for zooming the map image includes means for positioning an area of interest on the map image to the center of the screen.

19. (original) A display apparatus for a navigation system as defined in Claim 11, further comprising:

means for positioning an area of interest on the map image to the center of the screen;

means for zooming-in the map image to a degree that new information for selecting a destination is displayed on the screen; and

means for selecting the destination using the new information on the screen to calculate a route to the destination.

20. (original) A display apparatus for a navigation system as defined in Claim 19, wherein said new information includes POI (point of interest) icons showing positions and categories of POIs on the screen.